



MLDS CENTER

Maryland Longitudinal
Data System

Better Data • Informed Choices • Improved Results

Data Gap Analysis

June 2022

Maryland Longitudinal Data System Center
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Introduction

This document catalogs known gaps in the data contained in the Maryland Longitudinal Data System and identifies the reasons, impacts, and resolution of those gaps. Data gaps result from a variety of issues including the fact that the data is not collected, the data is collected, but not by one of the Center's data partners, or the Center is prohibited from collecting the data. This data gap analysis is intended for the MLDS Governing Board, staff of the MLDS Center, researchers, and stakeholders to understand and accurately interpret the information contained in the System.

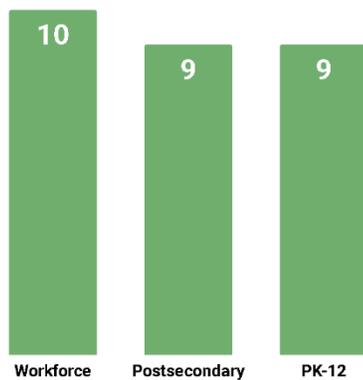
Each Data Gap listed includes:

1. A description of the **gap**;
2. The **reason** the gap exists;
3. The **impact** of the gap on Center output;
4. A **resolution**;
5. The **feasibility** of the resolution; and
6. The current **status**.

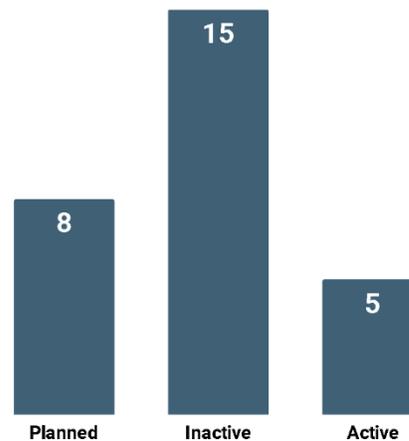
Summary

There are 28 cataloged gaps, and 9 resolved gaps. The graphs below summarize the gaps by sector, status, and feasibility.

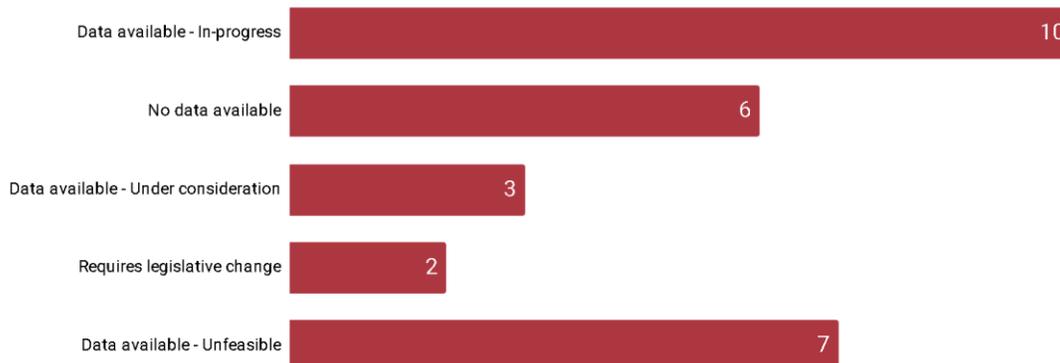
...by Sector



...by Status



...by Feasibility



Complete Listing of Data Gaps by Status

#	Sector	Gap	Feasibility	Status
3	Workforce	Federal and Military Employees	Data available - In-Progress	Active
4	Workforce	Contingent and alternative employment arrangements	Data available - In-Progress	Active
7	Workforce	PK-12 Applicants for Teacher Certification	Data available - Under consideration	Active
9	Workforce	National and Professional Certifications	Data available – In-progress	Active
28	PK-12	Socioeconomic Status for PK12 Students	Data available - In-progress	Active
1	Workforce	Student Education Record Required	Data available - In-progress	Planned
5	Workforce	Licensure from Labor and other license granting agencies	Data available - In-progress	Planned
10	Workforce	Unemployment Application and Benefits	Data available - In-progress	Planned
12	Postsecondary	Non-Credit Postsecondary Data/Adult Education Data	Data available - In-progress	Planned
14	Postsecondary	Postsecondary Non-Academic Program Data	Data available - Unfeasible	Planned
16	Postsecondary	For-Profit Private Postsecondary Data	Data available - Under consideration	Planned
18	Postsecondary	Postsecondary Faculty and Staff	Data available - In-progress	Planned
20	PK-12	Children in need of assistance	Data available - In-progress	Planned
2	Workforce	Standard Occupational Classification (SOC) Codes	No data available	Inactive
6	Workforce	Part-time or full-time employment and number of hours worked	No data available	Inactive
8	Workforce	Out-of-State workforce data	Requires legislative change	Inactive
11	Postsecondary	Remedial, Developmental, and/or Co-requisite Placement Assessments	Data available - Unfeasible	Inactive
13	Postsecondary	Out-of-State Postsecondary Education Data	Data available - Unfeasible	Inactive
15	Postsecondary	State Aided Independent out-of-state enrollments 2008-2012	Data available - Unfeasible	Inactive
17	Postsecondary	Economic Status Data for Postsecondary Students (Non-FAFSA)	No data available	Inactive
19	Postsecondary	College Enrollment Data Spring, Winter, and Summer Terms 2008-2013	Data available - Unfeasible	Inactive
21	PK-12	Criminal records	Data available - Under consideration	Inactive
22	PK-12	Medical and health records	Requires legislative change	Inactive
23	PK-12	Private PK-12 School Students	No data available	Inactive
24	PK-12	Homeschooled Students	No data available	Inactive
25	PK-12	School Climate Data	Data available - Unfeasible	Inactive
26	PK-12	Out-of-State PK-12 Education Data	No data available	Inactive

#	Sector	Gap	Feasibility	Status
27	PK-12	PK-12 Supplemental Program Data	Data available - Unfeasible	Inactive

Priorities

Listed below are the data gaps that Center staff believe are achievable and will significantly remove obstacles to accurately analyzing and reporting on student and workforce outcomes over time.

1. PK-12 Applicants for Teacher Certification
2. Licensure from Labor, MDH health occupation boards and commissions and other license granting agencies
3. Socioeconomic status for PK-12 students
4. Unemployment applications and benefits
5. Social determinants (e.g. CINA, Department of Health)
6. Federal and military employees

Feasibility Definitions

Below are the levels of availability the gaps have as well as a description of what each status means. Gaps may shift in feasibility over time.

1. Data available - In-progress

This status indicates that the Center has identified a data source, addressed any legal obstacles, and is working to establish agreements to obtain the data. The change may require additional approvals, such as changes to MOUs, inclusion in the Data Inventory, or changes to the Data Collection Calendar.

2. Data available - Under consideration

The data is available at the source, but not currently collected by an MLDS agency partner, or other state agency. This status indicates the agency partner or the source organizations have expressed an interest to provide this data to the Center.

3. Data available - Unfeasible

The data is available at the source, but not collected by an MLDS agency partner or other state agency. The collection of the data would require a new data collection by a state agency. This status indicates that it is administratively unfeasible to capture the data.

4. No data available

The data is not available from the source, not collected by an MLDS agency partner or other state agency, and the Center has found no examples of the data collected with fidelity in other states.

5. Requires Legislative Change

The data may or may not be available at the source, but the Center is unable to establish an agreement to obtain the data, or consider the collection of the data because state statute prohibits the MLDS from incorporating the data.

Statutes

Listed below are the various data gap statuses. Prior versions of this document included a 'Closed' status, but this did not take into consideration the possibility of a legislative change authorizing a data element that had previously been prohibited. Accordingly, instead of closed, data elements unavailable or legally prohibited are listed as 'Inactive'. The 'Legislative' status was also added to indicate possible changes may be made based on future legislation.

- **Planned:** "Planned" indicates that Center staff are exploring options to resolve the gap.
- **Active:** "Active" indicates Center staff are actively working on the resolution identified to resolve the gap.
- **Legislative:** "Legislative" indicates that changes in legislation may resolve the gap if passed. Center staff have identified changes in state law (prohibition lifted, amendment passed) or a new law is passed that impact the gap.
- **Resolved:** "Resolved" indicates that the gap has been eliminated by enacting the resolution listed. Data necessary to close the gap is now collected in the MLDS Operational Data Store and/or a policy change has been implemented.
- **Inactive:** "Inactive" indicates that the gap is not currently being addressed, but a resolution may be explored in the future.

Workforce Data

1. Student Education Record Required

Gap	MLDS must remove all workforce wage records that are not matched to a student education record. This results in two related gaps: <ol style="list-style-type: none"> 1. As new collections with education data from prior years are added to the MLDS, there may be a gap in a person's workforce history. 2. Lack of workforce data for Maryland's workforce population who have not attended a Maryland public school or college/university since 2007-2008.
Reason	Data Sharing Agreement Between the Maryland Department of Labor, Licensing & Regulation and Maryland Longitudinal Data System Center, 1.h. "System Identity" means the single unique identifier for each student in the MLDS., Signed July, 2018 System identity includes: <ol style="list-style-type: none"> i. A single student record (PK-12, or postsecondary); or ii. A student record matched with a record of the same student in one or more education sectors and/or the workforce.
Impacts	The MLDS Center is unable to load all Maryland wage records if there is no matching student education record in the MLDS. This limits the Center's ability to analyze all Maryland wage records, resulting in the inability to compare workforce outcomes of students who attended K12 or postsecondary education in Maryland with Maryland's entire workforce population. Additionally, Labor does not retain UI wage data beyond sixteen quarters. As new data collections are added to the MLDS, even if a person had an education record for multiple years, the MLDS Center cannot match to prior wages earned in Maryland.
Resolution	Request and find Labor workforce data more than 4 years old. Request Labor update their definition of "System identity" to not require an identity already in the system. This change would need to be reflected in Labor's MOU.
Feasibility	Data Available - In-Progress
Status	Planned Began discussions to receive wage data from prior years as part of the WDQI grant work.

2. Standard Occupational Classification (SOC) Codes

Gap	MLDS does not receive SOC (Standard Occupational Classification) codes from any source. SOC codes indicate the employee's occupation whereas NAIC provides the industry of the company for which the employee works.
Reason	SOC codes are not currently collected by Labor.
Impacts	To understand workforce outcomes for students, researchers need to know the student's occupation. Without SOC codes, researchers are left to make assumptions. For example, a computer science major working for a restaurant chain is assumed not to be working in an occupation for which he or she trained. However, that student could be the IT manager for the restaurant chain, in charge of supporting and maintaining its IT infrastructure. Similarly, it is assumed that a computer science major working for a large IT Tech firm is employed in his or her field of training when in fact the student could be an administrative assistant.
Resolution	Explore ways to gather information on workers' occupation.
Feasibility	No data available
Status	Inactive

3. Federal and Military Employees

Gap	Federal employment including military employees are not included in the workforce data.
Reason	Federal and military employees do not participate in the UI system and are therefore not part of the data provided to the MLDS.
Impacts	Maryland ranked fourth among the states in federal government employment in 2018 with 144,963 non-military federal jobs in 2018, according to information from the Bureau of Labor Statistics. On a per capita basis, the state ranks first with 240 federal jobs per 10,000 residents and these jobs pay better in Maryland than in any other state. The average annual wage of a federal job in Maryland is \$105,797, which is 27% higher than the national average. ¹ The lack of federal wage information leaves an incomplete picture of employment - especially considering that government jobs are often STEM and higher salary jobs.
Resolution	As of January 2018, the Federal Employment Data Exchange System (FEDES) will be temporarily suspended while the Employment and Training Administration (ETA) reassesses the feasibility of FEDES ² . The MLDS Center can explore ways to receive data through the State Wage Interstate System (SWIS) Clearinghouse. Although the SWIS repository contains UI data on all individuals with UI wages in a state, it can only be used to extract wage data on Workforce Innovation and Opportunity Act (WIOA) participants. The MLDS may explore if the use of the system could be expanded to obtain wage data on non-WIOA individuals. This gap has been partially addressed through the data sharing agreement with the Maryland Comptroller to receive income wage information from tax filings. Specifically, the Center receives aggregate wages of contract employees who receive a 1099 income statement. However, there are instances where the work of a self-employed or contract employee will not result in a 1099 and therefore those wages will not be known by the Center.
Feasibility	Data available - In-progress
Status	Active In 2019, House Bill 1206 passed and permits the establishment of a data sharing arrangement between the MLDS Center and the Comptroller for research purposes. Specifically, the Center provides the Comptroller with specified student information and the Comptroller matches the student information and provides aggregated data from the matched information on the average amount of wages earned. The use of this data is still being explored and analyzed.

4. Contingent and alternative employment arrangements

Gap	Contingent workers are people who do not expect their jobs to last or who reported that their jobs are temporary. These workers may also be referred to as freelance. Alternative employment arrangements include people employed as independent contractors, on-call workers, temporary help agency workers, and workers provided by contract firms. ³
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¹ Maryland State Department of Commerce. *Rankings and Statistics, Rankings, Workforce*. Retrieved April 2020 from <http://commerce.maryland.gov/about/rankings-and-statistics>.

² U.S. Department of Labor, Employment and Training Administration (ETA); Federal Employee Data Exchange System. Retrieved February 2018 from <https://www.doleta.gov/performance/fedes.cfm>.

³ U.S. Department of Labor, Bureau of Labor Statistics. *Labor force characteristics*. Retrieved February 2018 from <https://www.bls.gov/cps/lfcharacteristics.htm#contingent>.

Reason	Contingent and alternative workers do not participate in the UI system and are therefore not part of the data in the MLDS.
Impacts	In 2005 contingent and alternative employment accounted for up to 4 percent of all workers. ⁴ More recent estimates show these types of employment increasing ^{5,6} The lack of information on independent contractors and self-employed workers leaves an incomplete picture of employment outcomes for Maryland workers.
Resolution	This gap has been partially addressed through the data sharing agreement with the Maryland Comptroller to receive income wage information from tax filings. Specifically, the Center receives aggregate wages of contract employees who receive a 1099 income statement. However, there are instances where the work of a self-employed or contract employee will not result in a 1099 and therefore those wages will not be known by the Center.
Feasibility	Data available - In-progress
Status	Active Given some of the limitations discussed above, the Center will continue to explore other options for addressing this gap.

5. Licensure from Labor and other license granting agencies

Gap	Professional licenses from Labor or other license granting state agencies such as the Maryland Department of Health are not included in the MLDS.
Reason	MLDS does not receive credential or licensure information from Labor, nor is that data part of the Data Inventory or data sharing agreements with MLDS agency partners. Other licensing information would include health professional licensing in Maryland , or Maryland Department of Agriculture . Additional research is needed to compile all the licensing and credentialing agencies in Maryland.
Impacts	License and credential attainment is considered by many sources to be an educational outcome especially for students engaged in Career and Technical education programs. For students leaving Maryland public high schools and postsecondary institutions, license and credential attainment are positive educational outcomes that can inform the workforce opportunities for Maryland students.
Resolution	There are a large number of state agencies that grant licensure. The Center will begin incorporating this data as specific needs are identified.
Feasibility	Data available - In-progress
Status	Planned Law passed in 2021 that fixes legal and procedural issues with the 2018 Career Preparation Expansion Act to allow data to be collected directly by the MLDS Center. An MOU with the Maryland health occupation boards and commissions is currently in circulation to bring in their license data.

⁴ U.S. Department of Labor, Bureau of Labor Statistics. *Career Outlook: Working in a gig economy*.

Retrieved February 2018 from <https://www.bls.gov/careeroutlook/2016/article/what-is-the-gig-economy.htm>.

⁵ [U.S. Department of Commerce](#), U.S. Census Bureau. *More Than 380,000 Nonemployer Businesses Added to the U.S. Economy*, U.S. Census Bureau Reports. Retrieved February 2018 from <https://www.census.gov/newsroom/press-releases/2013/cb13-99.html>.

⁶ Noguchi, Yuki. (2018, January 22). Freelanced: The Rise of the Contract Workforce. NPR. Retrieved February 2018 from <https://www.npr.org/2018/01/22/578825135/rise-of-the-contract-workers-work-is-different-now>

6. Part-time or full-time employment and number of hours worked

Gap	The wage information provided by UI data does not indicate the number of hours worked or whether the employee was employed full or part-time.
Reason	UI data only provides the wages earned for the entire quarter.
Impacts	Knowing whether wages are part-time or full-time would allow more meaningful comparison of workforce outcomes.
Resolution	None
Feasibility	No data available - look at other states
Status	Inactive

7. PK-12 Applicants for Teacher Certification

Gap	Certain information about applicants for PK-12 educator certification are not included in the MLDS. This includes background information, certificated teachers who did not take up teaching, the number of denied applications, and PRAXIS results.
Reason	The MSDE teacher certification data system captures approvals only and does not include denied applications. Teacher candidates apply through local education agencies and not directly through MSDE. Information in the MSDE Staffing file provides information on currently employed staff within local education agencies, but does not include all teachers certified to teach in Maryland. Some, but not all colleges require certification as a condition to graduate from a teaching program. National Student Clearinghouse provides out-of-state postsecondary data, however the data are only for Maryland public high school graduates.
Impacts	Understanding teacher certification is necessary to understand the current teacher pipeline in Maryland. Without the background on all teacher certification applicants this limits the ability to report on where/what program(s) Maryland teachers are educated and limits the understanding of various outcomes from Maryland Approved Programs and out-of-state programs.
Resolution	Explore the feasibility of capturing this data from public sources. Some IHEs have PRAXIS data from ETS and could consider providing this to the MLDS Center. MSDE is in the process of implementing a new teacher certification management system. The Center can work with MSDE to determine if the new system can capture and report some of the data elements identified as necessary by the Governing Board.
Feasibility	Data available - Under consideration
Status	Active At the MLDS Governing Board direction, the MLDS Center conducted a feasibility study on collecting data on applicants for teacher certification. Teacher candidates apply through the LEA and not directly through MSDE. Therefore, the MSDE certification system only contains teachers in the pipeline who received certification and does not include denied applications. The MLDS Center is also exploring the availability of data from ETS to help close this gap.

8. Out-of-State workforce data

Gap	MLDS only receives wage data for people who are employed in Maryland.
Reason	MLDS only has access to Maryland UI records. There are interstate programs that are designed to exchange workforce data to allow states to continue to analyze student outcomes even if the student leaves the state. However, these interstate programs require re-disclosure of data which is prohibited by State law.

Impacts	Maryland is closely situated to other states and the District of Columbia. Movement across state lines is commonplace. Information on the movement of students across state lines for employment can assist the Center in answering policy questions related to “brain-drain” and workforce retention.
Resolution	The Department of Labor’s Wage Record Interchange System (WRIS or WRIS II) operations ceased on December 31, 2019. As of January 1, 2020 all queries related to wage data for all applicable programs are processed through the State Wage Interstate System (SWIS) Clearinghouse . Although the SWIS repository contains UI data on all individuals with UI wages in a state, it can only be used to extract wage data on Workforce Innovation and Opportunity Act (WIOA) participants. The MLDS may explore if the use of the system could be expanded to obtain wage data on non-WIOA individuals. The MLDS may also explore opportunities with other SLDS, such as the Multistate Longitudinal Data Exchange . Either option would require changes to state statute, revised data sharing agreements, approval by the MLDS Governing Board, and inclusion of the data elements in the Data Inventory.
Feasibility	Requires legislative change
Status	Inactive

9. National and Professional Certifications

Gap	The MLDS does not contain national, professional, or industry certifications for people educated or employed in Maryland.
Reason	This data is not captured by MLDS agency partners. The information is maintained by businesses or professional organizations and not captured in a way that is easily accessible.
Impacts	Certifications are an important component in understanding education and workforce outcomes.
Resolution	Explore the sources for available data and research solutions from other SLDS, including the Certification Data Exchange Project . The MLDS Center signed an MOU with Microsoft/Certiport to receive and incorporate Microsoft IT certification data. Other examples of certifications could come from COMPTIA, Oracle, and Adobe.
Feasibility	Data available - In-Progress
Status	Active Microsoft/Certiport data was added to the Data Inventory in March 2022.

10. Unemployment Applications and Benefits

Gap	The data provided by Labor does not currently include information on when individuals file for unemployment or receive unemployment benefits. Currently, if an individual is not included in a quarter of UI wage data, we do not know if they are out of state, in the federal workforce (or other excluded sector), or unemployed.
Reason	These data are not included in the data transfers from Labor to the MLDS Center.
Impacts	Knowing whether individuals are filing and receiving unemployment benefits would help the Center to better understand the population of individuals who are not found in the Maryland UI wage data. The Center would be able to examine unemployment as a key outcome for students, helping the State better understand the education-related predictors of unemployment. Additionally, having these data would help the Center to better understand workforce participation and wages by providing an additional group of non-missing individuals (unemployed individuals could be added to the denominator for

	workforce participation and wage calculations). These data will become increasingly important with the additional unemployment rate due to COVID-19.
Resolution	Explore the data available from the Maryland Department of Labor's Division of Unemployment Insurance (dllr.state.md.us/employment/unemployment.shtml).
Feasibility	Data available - In-Progress
Status	Planned

Postsecondary Education Data

11. Remedial, Developmental, and/or Co-requisite Assessments

Gap	The MLDS does not contain information on the placement assessments students take at some institutions upon entering higher education. These tests determine students' placement in coursework. These assessments may include AccuPlacer, transcript reviews, or other assessment measures.
Reason	Placement assessment results are maintained by the institution issuing the exam. MLDS agency partners do not collect these data.
Impacts	The lack of data on assessment results restricts MLDS Center's ability to provide more in-depth analysis of educational outcomes, by limiting the data available to measure academic preparedness prior to matriculation. This directly impacts several of the research questions on the MLDS Center Research Agenda.
Resolution	The assessments vary by institution and are not uniform. Remedial education is not offered at all IHEs. Some IHEs offer developmental studies or co-requisite courses rather than remedial education.
Feasibility	Data available - Unfeasible/ No Data Available
Status	Inactive

12. Non-Credit Postsecondary Data/Adult Education Data

Gap	Non-Credit Postsecondary Courses are not available in the MLDS.
Reason	Unit record data on students completing non-credit courses are collected by MHEC from community colleges that offer workforce training courses and course sequences. Data collections on workforce sequence enrollments at community colleges are under development. Non-credit coursework that included occupational training , courses for students with intellectual and developmental disabilities , life enrichment, English-as-Second Language, life skills, etc. are not collected by MHEC. MHEC is exploring developing data collections on workforce training courses and course sequences from public four-year institutions. MHEC does collect unit record data from non-degree seeking students taking credit-bearing courses. Those data are provided in current MHEC collections.
Impacts	People access educational opportunities throughout their lifetime for a variety of reasons. The absence of non-credit coursework limits MLDS ability to report on occupational training and retraining, technical education, and vulnerable populations such as students with intellectual and developmental disabilities.
Resolution	MHEC piloted a non-credit collection to support its workforce sequence grant and have added it as an established data collection. Those data will be provided to the Center on an annual basis.
Feasibility	Data available - In-Progress
Status	Planned

13. Out-of-State Postsecondary Education Data

Gap	Out-of-State postsecondary education data are limited to enrollments and degrees awarded to students who exited from a Maryland public high school. The out-of-state postsecondary data does not provide information on GPA, course enrollment, or credit accumulation.
Reason	Out-of-state postsecondary data are provided from the National Student Clearinghouse through a contract with MSDE. The data from the Clearinghouse are only available for

	students who exited from a Maryland public high school. This type of information is not collected by the Clearinghouse.
Impacts	This limits the Center's ability to make comparisons between students who went to college in-state and out-of-state on key college variables, including GPA. Additionally, we are unable to control for these variables when looking at outcomes across groups, because the variables are only present for one group. Furthermore, the Center lacks the ability to track individuals who did not attend a Maryland public high school but attended a Maryland college/university and also attend an out-of-state college/university, either before or after Maryland enrollment. This limits our ability to estimate the effects of precursors to and consequences of Maryland higher education.
Resolution	Explore the possibility of MHEC or the MLDS Center entering into a contract with the National Student Clearinghouse.
Feasibility	Data available - Unfeasible
Status	Inactive

14. Postsecondary Non-Academic Program Data

Gap	Postsecondary institutions offer a wide array of educational opportunities for students that are not captured in the MLDS data. This includes summer enrichment and pre-enrollment programs, and programs to support transfer students.
Reason	MHEC does not collect data on enrichment programs as the programs are widely varied and participation by students is typically optional. It is at the discretion of each institution to determine when and if an enrichment or pre-enrollment program will be offered and the qualifications for participation. Further, the programs are routinely modified or launched ad-hoc for one semester only.
Impacts	Program participation is likely a confounder in analyses. Because we do not know which students participate in programs, analyses are biased to the degree that program participation is related to the predictor and outcome variables. For example, in an analysis examining the relationship between college enrollment and long-term outcomes, students participating in certain programs geared toward improving long-term outcomes may have better long-term outcomes. By not controlling for program participation, analyses are likely over-estimating the relationship between college enrollment and long-term outcomes (i.e., some of the relationship would actually be due to program participation).
Resolution	The MLDS Center could collect data directly from a college if the research questions warrant. Alternatively, the college may provide the data to the MLDS Center if they are interested in having an enrichment program evaluated.
Feasibility	Data available - Unfeasible
Status	Planned

15. State Aided Independent out-of-state enrollments 2008-2012

Gap	MLDS Center does not have unit record data for students who completed high school out-of-state and enrolled in Maryland State-Aided Independent institutions prior to 2012.
Reason	State Aided Independent institutions did not provide unit record data on students enrolling from out-of-state high school to MHEC prior 2012. Only aggregate data were provided to MHEC.
Impacts	State-Aided institutions enroll large numbers of students that went to high school out-of-state. State-Aided institutions are often excluded from analysis due to incomplete records.

Resolution	MHEC does not have the data and does not have any plans to collect the data. MLDS could collect data from each institution.
Feasibility	Data available - Unfeasible
Status	Inactive

16. For-Profit Private Postsecondary Data

Gap	MLDS Center does not receive unit record data on Maryland colleges classified as For-Profit Private institutions (Private Career Schools or PCS).
Reason	MHEC does not require PCS institutions to submit data via the MAC2 collection; they complete MHEC surveys that provide aggregate data and some limited unit record data to support accreditation reporting
Impacts	Enrollment in PCS institutions constitutes less than 2% of all Maryland postsecondary degree-seeking enrollments.
Resolution	MHEC would need to expand MAC2 data collection PCS institutions to be able to provide comparable unit record data on PCS institutions to MLDS Center. The existing PCS unit record data collections need to be evaluated to determine what data are collected and if the data could be useful for research and reporting.
Feasibility	Data available - Under consideration
Status	Planned

17. Economic Status Data for Postsecondary Students (Non-FAFSA)

Gap	Economic status data for postsecondary students is limited to household financial data provided on student financial aid applications (approximately 70% of all enrollees). Data include adjusted gross income, parents' educational level, and expected family contribution. These data are limited to those who completed a FAFSA and had financial aid disbursed; the data do not include students who did not apply for aid, applied for aid but declined awards or who did not require the FAFSA to receive aid. These undergraduate and graduate students could include both students from high economic backgrounds who do not need or expect to be granted aid, as well as students from low economic backgrounds who are likely eligible for aid but do not apply or decline offers of aid. FAFSA data have use restrictions so that the data that are provided can only be used in research questions related to the administration of Title IV aid programs. Accordingly, even if the FAFSA was more complete it cannot be used as a proxy for SES in the same way as FARMS.
Reason	MHEC does not collect financial data on students that do not receive some type of financial aid (federal, state or institutional) or data that are external to the FAFSA.
Impacts	Economic status has been correlated with an individual's skill development, academic achievement, work and life outcomes, and overall psychological and behavioral well-being. ⁷ Economic data can inform provide additional context to inform policies at all levels of the education system. ⁸
Resolution	Explore solutions from other SLDS.
Feasibility	No data available

⁷ National Forum on Education Statistics. (2015). [Forum Guide to Alternative Measures of Socioeconomic Status in Education Data Systems](#). (NFES 2015-158). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

⁸ American Psychological Association (APA). Education and Socioeconomic Status Fact Sheet. Retrieved February 2015 from <http://www.apa.org/pi/ses/resources/publications/factsheet-education.aspx>.

Status	Inactive
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18. Postsecondary Faculty and Staff

Gap	The MLDS does not receive information on people employed in Maryland institutions of higher education.
Reason	MHEC collects information on faculty and staff but has not provided the data to MLDS as there is not currently a question included on the research agenda that would require this data. Some data on faculty will be provided to the MLDS as part of the MHEC CIS collection.
Impacts	The teacher-student link is an important part of an educational system. The ability to measure and control for the relationships between teachers and students provides more nuanced information on student outcomes.
Resolution	Review the MLDS Research Agenda. Work with MHEC to define the parameters necessary for MHEC to provide this data to the MLDS.
Feasibility	Data available - In-progress
Status	Planned

19. College Enrollment Data Spring, Winter, and Summer Terms 2008-2013

Gap	The MLDS Center does not have unit record data for students who enrolled in a Maryland college in the Spring, Winter, or Summer Terms in years 2008-2013.
Reason	Institutions did not provide unit record data on students enrolling in the Spring, Winter, or Summer Terms in years 2008-2013. The Enrollment Information System (EIS) collection was a fall-only collection until 2013.
Impacts	Students may opt to enroll in a term other than the Fall. These students are excluded from enrollment data for multiple years, resulting in a gap in the data.
Resolution	MHEC does not have the data and does not plan to collect the data. The MLDS Center could collect data from each institution. However, collecting data from prior time periods is problematic as the data from earlier periods no longer represent the academic outcomes for the term in the real-life. The data are no longer point-in-time once the time period has passed.
Feasibility	Data available - Unfeasible
Status	Inactive

PK-12 Data

20. Children in need of assistance records

Gap	Children in need of assistance (CINA) records for PK-12 students are not available in the MLDS. A “Child in need of assistance” means a child who requires court intervention because: (1) The child has been abused, has been neglected, has a developmental disability, or has a mental disorder; and (2) The child’s parents, guardian, or custodian are unable or unwilling to give proper care and attention to the child and the child’s needs. This is defined in Md. Code, Courts and Judicial Proceedings § 3-801(g).
Reason	The MLDS is prohibited by law from including this information under Md. Code, Ed. Art. § 24-701(f)(3)(iv).
Impacts	Information on children in need of assistance are an important variable in understanding student outcomes. When modeling student outcomes, if these data are not included in the model, relationships between predictors of interest (e.g., course taking) and the outcome (e.g., achievement) may be less accurate than if these data were included in the model. Additionally, students involved in juvenile services represent an important at-risk student group. Both the Departments of Juvenile Services (DJS) and Human Resources (DHR) have expressed an interest in working with the Center to report on the educational and workforce outcomes of children served by those agencies.
Resolution	Revisions to Md. Code, Ed. Art. § 24-701(f)(3)(iv)
Feasibility	Data Available - In-Progress
Status	Planned HB 711 was proposed during the 2020 legislative session and would have required the MLDS Center to add unit record placement data from State-sponsored out-of-home care. Amendments were made to HB 711 and the bill was voted out of committee, however due to the early end date of the legislative session the bill was not passed. The bill was introduced again in the 2021 legislative session as HB 854 and was signed by the Governor, taking effect October 1, 2021. Additionally, in 2022 HB 763 removes the restriction for the MLDS Center to receive CINA and Criminal History data.

21. Criminal records

Gap	Criminal records are not available in the MLDS.
Reason	The MLDS is prohibited by law from including this information under Md. Code, Ed. Art. § 24-701(f)(3)(iv).
Impacts	When modeling student outcomes, if these data are not included in the model, relationships between predictors of interest (e.g., course taking) and the outcome (e.g., achievement) may be less accurate than if these data were included in the model. Further, House Bill 704 of the 2019 Maryland General Assembly altered 24-701 to define student data to include juvenile service records and an important outcome for this group is involvement in the adult criminal justice system. Information on criminal justice outcomes is important for examining the school to prison pipeline.
Resolution	Revisions to Md. Code, Ed. Art. § 24-701(f)(3)(iv)
Feasibility	Data available - Under consideration
Status	Inactive In the 2022 legislative session, HB 763 passed and removes the restriction for the MLDS Center to receive CINA and Criminal History data.

22. Medical and health records

Gap	Medical and health records for PK-12 students are not available in the MLDS.
Reason	The MLDS is prohibited by law from including this information under Md. Code, Ed. Art. § 24-701(f)(3)(iv).
Impacts	Students with underlying medical, health, and behavioral problems represent a group of at-risk students for whom educational-based prevention and intervention services may be directed. Better understanding the links between early health indicators and later outcomes would help to direct resources to the students who need them most at important developmental periods. Additionally, when modeling student outcomes, if these data are not included in the model, relationships between predictors of interest (e.g., course taking) and the outcome (e.g., achievement) may be less accurate than if these data were included in the model. Note: With the passage of the Blueprint For Maryland's Future – Implementation, there is a new focus on the impact of social determinants on student outcomes. MLDS is expected to provide research and analyses on this topic, but currently cannot access the necessary data.
Resolution	Revisions to Md. Code, Ed. Art. § 24-701(f)(3)(iv)
Feasibility	Requires legislative change
Status	Inactive

23. Private and Nonpublic PK-12 School Students

Gap	There is no data on private PK-12 school students in the MLDS and publicly-funded nonpublic student data is limited.
Reason	Maryland private schools voluntarily provide aggregate school enrollment counts annually. No student level data is collected from private schools. Without student level data, there is no meaningful data for the MLDS. In the 2019-2020 school year, MSDE reported 882,538 ⁹ public school students and 132,620 ¹⁰ non-public school students. Publicly-funded nonpublic schools are reported in the September Attendance file with an entry and exit date.
Impacts	Some stakeholders believe having private and nonpublic PK-12 data will provide a source of comparison to Maryland public school student outcomes. The requirements for Maryland public school students and Maryland private and nonpublic school students are very different. Much of the data collected on public school students is not available for private or nonpublic school students.
Resolution	Work with MSDE and the Research Branch to find public sources of comparable data, if needed for analysis.
Feasibility	No data available
Status	Inactive

24. Homeschooled Students

Gap	There is no data on homeschooled students in the MLDS.
Reason	Homeschool students register with their local school system which verifies compliance and provides instructional supervision. This data is not collected at the student level by

⁹ Maryland State Department of Education. [Maryland Public School Enrollment by Race/Ethnicity and Gender and Number of Schools, September 30, 2020](#). Published January 2021 at <http://marylandpublicschools.org/about/Pages/DCAA/SSP/index.aspx>.

¹⁰ Maryland State Department of Education. [Nonpublic School Enrollment, State of Maryland, September 30, 2019](#). Published January 2020 at <http://marylandpublicschools.org/about/Pages/DCAA/SSP/index.aspx>.

	MSDE. Data is only reported aggregately by each LEA, which does not provide meaningful data for the MLDS.
Impacts	Some stakeholders believe having data on homeschooled students will provide a source of comparison to Maryland public school student outcomes. The requirements for Maryland public school students and Maryland homeschooled students are very different. Much of the data collected on public school students is not available for homeschooled students.
Resolution	Work with MSDE and the Research Branch to find public sources of comparable data, if needed for analysis.
Feasibility	No data available
Status	Inactive

25. School Climate Data

Gap	There is no student-level data on PK-12 school climate data included in the MLDS.
Reason	These data have not been collected by schools or MSDE at the student level.
Impacts	Student-level school climate provides important qualitative information from students, parents, and teachers about their schools. Research has shown that differences in schools account for differences in student outcomes. Understanding the climate of a school can help explain the differences in student outcomes between schools.
Resolution	The Maryland Every Student Succeeds Act (ESSA) Consolidated State Plan includes school climate surveys. MSDE piloted a school survey in 2018 and fully administered in 2019. However, data are reported at the school level and not unit record.
Feasibility	Data available - Unfeasible
Status	Inactive

26. Out-of-State PK-12 Education Data

Gap	The MLDS does not contain information on out-of-state PK-12 students.
Reason	This data is outside of the scope of the MLDS.
Impacts	Not applicable
Resolution	Limited data on students who attended out-of-state PK-12 schools is available through MHEC collections as students enroll in higher education.
Feasibility	No data available
Status	Inactive

27. PK-12 Supplemental Program Data

Gap	Local school systems and schools offer a wide array of supplemental educational services, programs, and enrichments for students which lead to positive student outcomes that are not captured in the MLDS data. This may include after school programs, behavioral interventions, and enrichment programs.
Reason	MSDE does not capture this type of information at the state level and it is unclear how robust the collection is of this information at the local school system level.
Impacts	Program participation is likely a confounder in analyses. Because we do not know which students participate in programs, analyses are biased to the degree that program participation is related to the predictor and outcome variables. For example, in an analysis examining the relationship between high school student poverty and long-term outcomes, students participating in enrichment activities may have better long term outcomes. By not controlling for program participation, analyses are likely over-

	estimating the relationship between poverty and long-term outcomes (i.e., some of the relationship would actually be due to program participation).
Resolution	Look for information from publicly available sources that would provide context as needed. Additionally, external data may be linked to the MLDS through the external data procedure to evaluate a specific PK-12 program.
Feasibility	Data Available - Unfeasible; not at a large scale collection
Status	Inactive

28. Socioeconomic Status for PK-12 Students

Gap	The MLDS does not currently contain a reliable and consistent measure of students' socioeconomic status.
Reason	The variables necessary to compute a robust measure of socioeconomic status are not available from MSDE.
Impacts	<p>Socioeconomic status (SES) has been correlated with an individual's skill development, academic achievement, work and life outcomes, and overall psychological and behavioral well-being.¹¹ SES data can inform provide additional context to inform policies at all levels of the education system.¹²</p> <p>The term "socioeconomic status" can be defined broadly as one's access to financial, social, cultural, and human capital resources. Variables from three primary components are typically used to "measure" socioeconomic status:</p> <ul style="list-style-type: none"> ● family income ● parental educational attainment ● parental occupation.¹³ <p>The MLDS, like the education community as a whole, has historically relied on free and reduced-price meals (FARMS) data to identify socioeconomically disadvantaged students and schools. Using the FARMS indicator as a measure of poverty has advantages and disadvantages. The advantage is that it is readily available and it is a commonly used measure in educational research (because it is usually the only measure available). One disadvantage is that the FARMS indicator is only a proxy measure of poverty; it reflects only household income and not parental educational attainment or occupational status (Cowan et al., 2012). A second disadvantage is that it reflects only families that chose to participate. A third disadvantage is that recent changes to the National School Lunch Program have expanded eligibility so that many students receive free meals at school regardless of household income, making data since 2012 particularly inaccurate (USDE, 2012). Finally, FARMS is only an indicator of household poverty; it does not capture the full spectrum of socioeconomic status.</p>
Resolution	Explore alternative measures and sources of data to include in the MLDS. Census block and/or tract numbers could be used to construct socioeconomic status indicators at the student's household neighborhood level.
Feasibility	Data available - In-Progress
Status	<p>Active</p> <p>House Bill 1206 requires county boards of education to convert student home addresses into a U.S. Census Bureau tract or block number and then provide that information to MSDE. MSDE will in turn provide these data to the MLDS Center. The MLDS Center and MSDE formed the Census Tract and Block Data Workgroup with representatives from four local school systems. The Census Tract and Block Data Workgroup's purpose is to discuss data availability, potential barriers, and supports for local school systems as well as review draft protocols and assist with the implementation of this new initiative. Full implementation is planned for Fall 2022. With the addition of student census block</p>

¹¹ National Forum on Education Statistics. (2015). [Forum Guide to Alternative Measures of Socioeconomic Status in Education Data Systems](#). (NFES 2015-158). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

¹² American Psychological Association (APA). Education and Socioeconomic Status Fact Sheet. Retrieved February 2015 from <http://www.apa.org/pi/ses/resources/publications/factsheet-education.aspx>.

¹³ National Forum on Education Statistics. (2015). (NFES 2015-158).

group and tract data to the MLDS, analysts will then be able to merge with publically available data from the U.S. Census Bureau on a wide array of measures, including median household income and percentage of households with income below the poverty level. Please note, however, that these measures are all at the neighborhood level and not at the student level.

Appendix

Resolved Data Gaps

1. Required 5-year de-linking of student and workforce records

Gap	A student record must be de-linked from a workforce record five years after the student's last enrollment in a Maryland educational institution.
Resolution	Revisions to Ed. Art., § 24-702(c), Annotated Code of Maryland effective July 2017 that changes the limit from 5 to 20 years.

2. North American Industry Codes (NAIC)

Gap	NAIC (North American Industry Codes) used to determine the industry of each employer in the Unemployment Insurance UI database, are missing in the MLDS.
Resolution	NAIC codes provided by Labor have been completely and consistently loaded into the MLDS. MLDS analysis shows that 99.2% of employers in the System have a NAIC code.

3. Early Childhood Education Data

Gap	The Division of Early Childhood Development (DECD) at MSDE implemented the Kindergarten Readiness Assessment (KRA) in 2016. The MLDS does not contain this assessment data.
Resolution	Data elements related to the KRA were approved for inclusion by the MLDS Governing Board in December 2016.

4. Removal of workforce records that are not matched to a student record

Gap	MLDS must remove all workforce records that are not matched to a student record within 90 days after receiving the workforce record from Labor. This leaves a gap of a person's workforce history that may exist prior to or concurrent to education records.
Resolution	Labor now includes an annual data file to the MLDS that includes the combined records for all four quarters of a calendar year. This change is reflected in the MLDS Data Collections Calendar.
Status	Resolved

5. Teacher candidates

Gap	Maryland Approved Program Completers are not clearly identified in the MLDS.
Resolution	MHEC revised how it collects data on Maryland Approved Program Completers. The new collection was piloted in 2018 and fully deployed in 2019.
Status	Resolved

6. Student Discipline Data

Gap	Student discipline data for PK-12 students is not available in the MLDS.
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Resolution	House Bill 704 - Student Data and Governing Board was passed in the 2019 legislative session and removed the restriction against including student discipline data records as “student data” (Revisions to Md. Code, Ed. Art. § 24-701(f)(3)(iv))
Status	Resolved

7. Apprenticeship Data

Gap	Apprenticeship data is currently not in the MLDS.
Resolution	The MLDS Center engaged in discussions with Labor on the availability of the apprenticeship data. Apprenticeship data elements were approved during the June 2019 MLDS Center Governing Board meeting. The MLDS Center received the first data file in February 2020.
Status	Resolved

8. Career and Technical Education Data

Gap	Career and Technical Education concentrator data for Maryland’s K12 public school students is not currently included in the Data Inventory.
Resolution	CTE Concentrators are included in the Maryland Every Student Succeeds Act (ESSA) Consolidated State Plan . As of 2018, CTE Concentrator data is now collected in MSDE’s High School Data Collection.
Status	Resolved

9. Juvenile Delinquency Records

Gap	Juvenile delinquency records for PK-12 students are not available in the MLDS.
Resolution	Revisions to Md. Code, Ed. Art. § 24-701(f)(3)(iv) were made to allow the inclusion of this information. As of 2021, DJS data are loaded to the MLDS.
Status	Resolved

Special COVID-19 Related Data Gaps

The extraordinary circumstances from the COVID-19 pandemic resulted in several data gaps and data anomalies across all sectors. Beginning in 2020, partner agencies may have had data collections that were delayed, altered, partially collected, or not collected at all. If data were collected, the circumstances around the collection may have been in a different format than normal (virtual; with PPE; shortened time; etc.). The MLDS Center acknowledges that missing and/or incomplete data may be disproportionate by important student, school, and local school system subgroup characteristics.

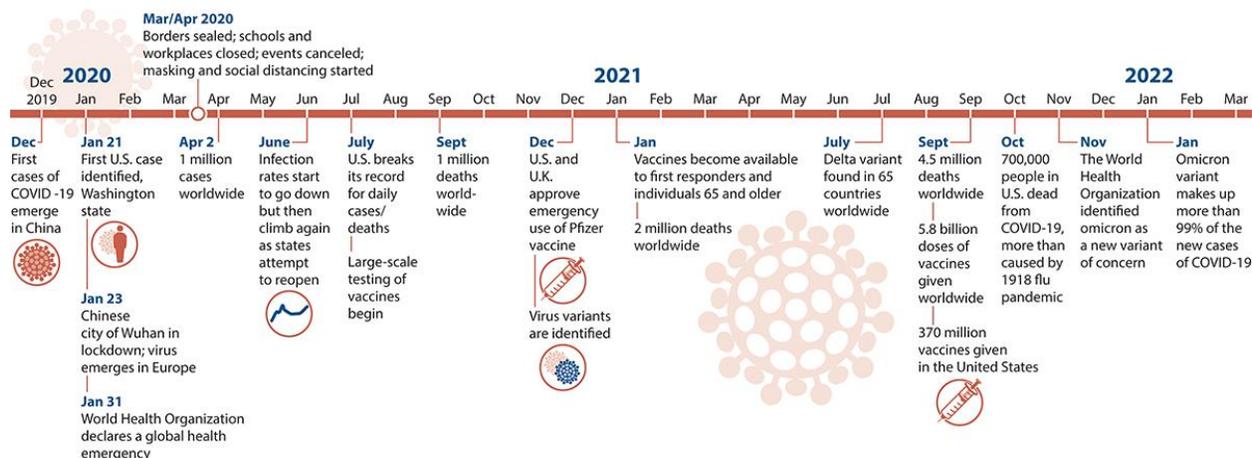
Below is a list of some of the possible gaps that exist due to COVID-19 as well as important contextual elements to consider. More gaps will surface as we continue to analyze the impact of the pandemic. These gaps may also change as more data becomes available.

COVID-19 Considerations and Missing and/or Incomplete Data Gaps

#	Sector	Gap
1	PK-12	No assessments administered in Spring 2020 and Spring 2021
2	PK-12	Attendance data collection date altered
3	PK-12	In-person courses shifted to distance learning
4	Postsecondary	Suspended admissions requirements to many institutions of higher education
5	Postsecondary	Course modalities expanded
6	Postsecondary	Admission and Retention patterns disrupted
7	Postsecondary	Institutions implemented new grading options
8	Workforce	A state of emergency was proclaimed in Maryland on March 5, 2020 and lifted July 1, 2021
9	Workforce	The reason for reduced participation in the workforce is unknown
10	Juvenile Delinquency	Changes to operations resulted in a reduction in youth detention

Timeline

The timeline below provides a review of the main events that occurred from the start of the pandemic to March 2022. While not Maryland specific, the timeline summarizes the major events occurring at the time to add context when reviewing the narrative below. It is important to include these dates now for future referencing of the Timeline. It is unlikely we will remember exactly what month and year each event happened if the specific date is not recorded.



Source: <https://covid19.macmillanlearning.com/>

PK-12: No assessments administered in Spring 2020 and Spring 2021

The Maryland Comprehensive Assessment Program (MCAP) was developed in 2019 and encompasses all state assessments. The MCAP was piloted in December 2019 with a planned implementation in Spring 2020. However, no assessments were administered in 2020 because of COVID-19 school closures. In Fall 2021 (Early Fall), the shortened versions were administered and students were tested in content from the course they were enrolled in for Spring 2021. Therefore, MCAP results are not necessarily comparable and several considerations should be made when using the data. Additionally, multiple waivers were passed regarding MCAP participation and testing requirements.

PK-12: Attendance data collection date altered

Attendance refers to a student’s presence or absence in an instructional program approved by the state, district, and/or school. State law defines attendance as the student being present at school on a regular school day and includes participation in school-sponsored activities. (COMAR 13A.02.06.02B(5); COMAR 13A.08.01.01; 2020 Maryland Student Records System Manual). Due to the impact of COVID-19, the as-of-date for reporting days attending, days absent, and days not belonging for the 2020 End of the School Year data collection was March 13, 2020; typically this date is at the end of June. In 2020-2021 the as-of-date was June 25, 2021.

PK-12: In-person courses shifted to distance learning

Beginning in March 2020, all schools shifted to distance learning with the mode of instruction being synchronous, asynchronous, or blended learning (a combination of synchronous and asynchronous). Each local school system decided which virtual platform to use and students utilized a variety of tools to complete courses. School remained virtual for the 2020-2021 school. Reopening of schools began in the 2021-2022 school year, but reopening plans differed by local education agency. The gap related to

distance learning is that there is incomplete data on all the changes made to administer distance learning courses throughout the COVID shutdown period.

Postsecondary: Suspended admissions requirements to many institutions of higher education

In the Fall of 2020, many postsecondary institutions suspended or relaxed their admissions requirements. These requirements may have included entrance exams such as the SAT and/or ACT, high school Grade Point Average, course requirements, or other academic assessment results. As of Spring 2022, many institutions have not returned to admissions requirements in place prior to COVID-19 and it is unclear when they may do so. While this is not a gap, it explains the variability between years in admission requirements.

Postsecondary: Course modalities expanded

In-progress courses for Spring 2020 primarily concluded via remote delivery, either synchronous or asynchronous. From Summer 2020 forward, course taking varied between in-person, remote, and hybrid models. Some courses remained exclusively in-person with small enrollments, some were hybrid, and others shifted entirely to online (synchronous and/or asynchronous) delivery. As of Spring 2022, variation in course modality continued, and the decisions over modality were determined by each postsecondary institutions. Certain classes are offered solely in-person, some online, and others hybrid. The gap related to course modality is that there is no master list of how course were offered at each institution and no clear indicators in the existing data collections to signal the modality differences at the course or student levels.

Postsecondary: Admission and retention patterns disrupted

Changes in enrollment may or may not be attributed to the impacts of COVID. Some students may have wanted to go out of state, but due to COVID enrolled in state. Conversely, students who would have enrolled in state enrolled in institutions out of state. Students who may have gone to a four year institution may have gone to a community college. Interestingly, the expansion of online course offerings may have resulted in adult learners, who previously stopped out, re-enrolling and finishing their degrees. Additionally, some colleges expanded their Summer 2020 and 2021 course offerings, allowing student to take courses that may have been disrupted due to COVID or were offered at reduced class sizes to meet social distancing requirements. When studying college enrollment, it is possible that overall enrollment declines were a result of new students delaying their initial college experience versus a continuing student.

Postsecondary: Institutions implemented new grading options

Many institutions of higher education offered a range of new grading options. Some established institution-wide policies, while others offered students the opportunity to register for courses Pass/Fail rather than for a grade. In some institutions, students were offered the flexibility to select Pass/Fail until the end of the term. Some institutions extended the Add/Drop and Withdrawal periods without academic or financial penalty. Also, some institutions relaxed course retake policies. When studying college outcomes, it is possible that different grade outcomes were a result of students selected certain grading options not offered in previous years.

Workforce: The reason for reduced participation in the workforce is unknown

The federal response to COVID included the passage of the CARES Act on March 27, 2020, and the Paycheck Protection Program and Health Care Enhancement Act (PPP) on April 24, 2020. These acts provided funds to states to support individuals and businesses impacted by the economic shutdown. Governor Hogan committed federal and state funds to support small businesses, economically and socially disadvantaged Marylanders, education, and critical sectors of the economy. These funds provided direct cash transfers, extended unemployment benefits, covered expenses for childcare services, offered access to low interest/no interest loans and other critical supports to Marylanders. The funds Marylanders received from these programs, whether as unemployment insurance claims or from their employer in lieu of or to supplement regular pay are not reported in unemployment insurance filings. It is possible that some Marylanders reported as *not visible* in the wage data or reported with lower wages actually remained employed receiving full wages or supplemental wages through CARES or PPP. Without these data, unemployed Marylanders cannot be distinguished from those who were employed but being paid through CARES or PPP. It can also not be determined whether Marylanders who were *visible* received supplemental funds through these programs so that what appears to be reductions in earnings or growth in wage gaps really reflects only those wages earned directly from the employer not those earned indirectly through CARES or PPP. In short, data limitations make it difficult to understand if overall financial resources were really reduced and for whom.

Workforce: A state of emergency was proclaimed in Maryland on March 5, 2020 until July 1, 2021

During Maryland's state of emergency non-essential businesses closed and residents were told to stay home as often as possible to reduce spreading COVID-19 and risking possible exposure. This resulted in an economic shutdown. It also resulted in changes to the makeup of the Maryland workforce as residents made employment decisions based on a variety of issues, such as caring for a family member at home.

Juvenile Delinquency: Changes to operations resulted in a reduction in youth detention

There was a decline in the number of youth receiving services within youth detention centers. On April 13, 2020, the Court of Appeals Chief Judge Mary Ellen ordered judges in juvenile courts¹⁴ "to limit detention or commitment, unless necessary to protect the safety of that juvenile respondent or the safety of others." It is possible this decline is due to: (a) less complaints and offenses overall, (b) the release of individuals to ensure the safety of those with health conditions, or (c) difficulty social distancing when living in close proximity to so many youth and staff. In addition, this could also have impacted the number of youth remaining in juvenile detention centers.

¹⁴ Guiding the response of the circuit courts sitting as juvenile courts to the COVID-19 emergency as it relates to those juveniles who are detained, committed pending placements, or in commitments (n.d). Retrieved June 3, 2022, from [20200413guidingresponseofcircuitcourtssittingasjuvenilecourts.pdf \(mdcourts.gov\)](https://www.mdcourts.gov/20200413guidingresponseofcircuitcourtssittingasjuvenilecourts.pdf)